REMARKS

In response to the Office action dated November 15, 2006, Applicants respectfully request reconsideration based on the following remarks. Applicants respectfully submit that the claims as presented are in condition for allowance.

Claims 1-16 are pending in the present Application for consideration upon entry of the following remarks. Claims 1-8 and 13-16 are cancelled, Claims 17-28 are added and Claims 9, 11 and 12 are amended, leaving Claims 9-12 and 17-28 for consideration upon entry of the present amendment and following remarks.

Support for the claim amendments is at least found in the specification, the figures, and the claims as originally filed. More particularly, support for amended Claim 9 is at least found in the specification at Page 11, lines 1-12 and Figures 3A and 3B. Support for new Claim 17 is at least found in originally filed Claim 13 and Figure 4. Support for new Claims 18-22 is at least found in originally filed Claims 1, 7 and 8, Figure 2 and in the specification at Page 8, lines 6 to Page 9, line 2. Support for new Claims 23-28 is at least found in originally filed Claims 1-6, Figure 1 and in the specification at Page 6, line 14 to Page 7, line 5.

Reconsideration and allowance of the claims are respectfully requested in view of the following remarks.

Claim Rejections Under 35 U.S.C. §103

Claims 1-8

Claim 1 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Hunka, U.S. Patent No. 4,114,034 (hereinafter "Hunka") in view of Atsumi et al., U.S. Patent No. 5,589,678 (hereinafter "Atsumi").

Claims 2-6 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hunka in view of Atsumi and further in view of Son, U.S. Patent No. 6,741,234 (hereinafter "Son").

Claims 7 and 8 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hunka in view of Atsumi and further in view of Seo, U.S. Patent No. 5,589,678 (hereinafter "Seo"). Applicants respectfully traverse the rejections.

Claims 1-8 are hereinabove cancelled without prejudice and rejections are rendered moot for these claims.

Claims 9-16

Claims 9-16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Lyon, U.S. Patent No. 4,521,772 (hereinafter "Lyon") in view of Perret, Jr. et al., U.S. Patent No. 5,736,686 (hereinafter "Perret"). Applicants respectfully traverse the rejections. Claims 13-16 are hereinabove cancelled without prejudice and rejections are rendered moot for these claims.

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing that all elements of the invention are disclosed in the prior art and that the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996).

Amended Claim 9 recites, *inter alia*,

"the light concentrating pad comprising:
an optical wave guide;
a lower reflecting plate attached to a bottom of the optical wave guide for upwardly reflecting light introduced into the optical wave guide;
an upper transparent plate attached to a top of the optical wave guide for passing the light reflected from the lower reflecting plate;
side reflecting plates attached to a portion of sides of the optical wave guide for reflecting the light in the optical wave guide; and
a light concentrating *plate attached to an edge of the lower reflecting plate and separated from the upper transparent plate, wherein the light concentrating plate reflects external light into the optical wave guide through another portion of the sides of the optical wave guide*."

In the Office action at Page 9, it is conceded that Lyon does not explicitly disclose the components of the light concentrating pad. It is alleged that Perret discloses the light concentrating pad of the claimed invention. The virtual bulb 52, reflective structure 15 and top surface 49 of Perret are considered as teaching the "light concentrating plate," the "lower reflecting plate" and the "upper transparent plate," respectively of Claim 9.

As illustrated in Fig. 1 of Perret, the virtual bulb 52 is attached to the reflective structure 15 and the top surface 49. Therefore, the virtual bulb 52 of Perret does not disclose a light concentrating plate attached to an edge of the lower reflecting plate and separated from the upper transparent plate of amended Claim 9.

Furthermore, for purpose of this response, if the virtual bulb 52 of Perret is considered as disclosing the "concentrating plate," Perret does not disclose side reflecting plates attached to a portion of sides of the optical wave guide for reflecting the light in the optical wave guide of amended Claim 9. Conversely, if the virtual bulb 52 of Perret is considered as disclosing the "side reflecting plate," Perret does not disclose the "light concentrating plate" of the claimed invention.

Thus, Lyon and Perret, alone or in combination, do not teach or suggest *all of the limitations* of amended Claim 9. Accordingly, *prima facie* obviousness does not exist regarding Claim 9 with respect to Lyon and Perret.

Since Lyon and Perret fail to teach or suggest all of the limitations of amended Claim 9, one of ordinary skill at the time of Applicants' invention would not have a motivation to modify or combine the references, nor a reasonable likelihood of success in forming the claimed invention by the Examiner's suggestion of modifying or combining the reference. Thus, here again, *prima facie* obviousness does not exist regarding amended Claim 9 with respect to Lyon and Perret.

Thus, *prima facie* obviousness does not exist regarding amended Claim 9 with respect to Lyon and Perret. Applicants respectfully submit that Claim 9 is not further rejected or objected and is allowable. Claims 10-12 variously depend from Claim 9, inherit all of the limitations of amended Claim 9 and are correspondingly allowable. Reconsideration, withdrawal of the relevant §103 rejections, and allowance of Claims 9-12 are respectfully requested.

Regarding New Claims 17-28

Claim 17

Claim 17 depends from Claim 9 and inherits all of the limitations of amended Claim 9. As discussed above, amended Claim 9 is allowable. Applicants respectfully submit that Claim 7 is correspondingly allowable. Consideration and allowance of Claim 17 are respectfully requested.

Claims 18-22

Support for new Claims 18-22 is at least found in originally filed Claims 1, 7 and 8, Figure 2 and in the specification at Page 8, lines 6 to Page 9, line 2.

New independent Claim 18 recites, *inter alia*,

> "a light guide disposed at a sidewall of the case, introducing external lights into the case and including a *protrusion* outwardly protruded from the case, the light guide directly accepting the external lights through the protrusion *to obliquely irradiate lights penetrating the light guide onto a surface of the worktable* through an opening formed in a lower panel of the case;
>
> an optical sensor disposed in the case and over the opening to detect lights reflecting from the surface of the worktable; and
>
> a printed circuit board with electronic parts processing an output signal of the optical sensor to generate an output signal that corresponds to a position of the case."

Regarding Hunka, in the Office action at Page 4, it is conceded that Hunka does not disclose that the light guide "outwardly protrudes from the case." Furthermore, light passing through the beam splitter 12/lens system 14 (considered as the "light guide") is not radiated *onto the worktable* as claimed. Therefore, Hunka does not teach or suggest the light guide directly accepting the external lights **through the protrusion** to obliquely irradiate lights penetrating the light guide **onto a surface of the worktable** through an opening formed in a lower panel of the case of Claim 18.

The photosensitive array 16 of Hunka considered as the "optical sensor" of the claimed invention, is not disposed *over* the viewing aperture 15, that may be considered as the "opening" of the claimed invention. Therefore, Hunka does not teach or suggest an optical sensor disposed in the case and **over the opening** to detect lights **reflecting from the surface of the worktable** of Claim 18.

Regarding Atsumi, in the Office action at Page 4, Atsumi is alleged as disclosing the light guide "outwardly protrudes from the case." Viewing window 7/7a of Atsumi is considered as disclosing the "light guide" of the claimed invention. Applicants respectfully disagree.

In Atsumi, external light may enter the scanner through the viewing window 7, but a shutter 8 blocks/covers the viewing window 7 while the scanner reads the bar code. (Col. 2, lines 52-58 and Col. 3, lines 4-9.) The window 7/7a is merely a transparent window for an operator to recognize the location of the bar code. That is, the window 7 is in no way used to accept external light *during the use* of the scanner. To the contrary, Atsumi specifically teaches that the window 7 *blocks* light. Therefore, Atsumi also does not teach or suggest the **light guide**

directly accepting the external lights through the protrusion to obliquely irradiate lights penetrating the light guide onto a surface of the worktable through an opening formed in a lower panel of the case of Claim 18.

For purpose of this response, even if window 7 is considered as being a protrusion and teaching the "light guide directly accepting the external lights through the protrusion" of the "light guide" of the claimed invention, light passing through the window 7 and penetrating the window 7 is *vertically* radiated onto the bar code. That is, the light accepted by and penetrated through the window 7 is not *obliquely* irradiated onto the bar code/worktable, contrary to the claimed invention. Therefore, Atsumi further does not teach or suggest the light guide directly accepting the external lights through the protrusion **to obliquely irradiate lights penetrating the light guide** onto a surface of the worktable through an opening formed in a lower panel of the case of Claim 18.

The sensor 4 and the unhatched portion of the bottom 2a of Atsumi may be considered as the "optical sensor" and the "opening" of the claimed invention. As disclosed by Atsumi, the sensor 4 is not disposed over the "opening" in the bottom 2a of the scanner 1. Therefore, Atsumi also does not teach or suggest an optical sensor disposed in the case and **over the opening** to detect lights **reflecting from the surface of the worktable** of Claim 18.

Furthermore, regarding Hunka and Atsumi, it is conceded in the Office action at Page 7 with respect to Claim 7 that Hunka and Atsumi do not disclose irradiating external light onto the worktable. Therefore, Hunka and Atsumi further do not teach or suggest the light guide directly accepting the external lights **through the protrusion** to obliquely irradiate lights penetrating the light guide **onto a surface of the worktable** through an opening formed in a lower panel of the case of Claim 18.

Regarding Seo, in the Office action at Page 8, Seo is alleged as disclosing a light guide (plate 20/ mirror 40) accepting external light and irradiating the light onto the surface of the worktable through an opening (30) in Figure 1. Applicants respectfully disagree.

The plate 20/mirror 40 of Seo does not have anything resembling a "protrusion" as claimed. Therefore, Seo also does not teach or suggest the light guide directly accepting the external lights **through the protrusion** to obliquely irradiate lights penetrating the light guide **onto a surface of the worktable** through an opening formed in a lower panel of the case of Claim 18.

For purpose of this response, even if plate 20/mirror is considered as the "light guide directly accepting the external lights through the protrusion" of the claimed invention, light passing through the plate 20 and penetrating the plate 20 is *vertically* radiated onto a worktable. That is, the light accepted by and penetrated through the plate 20 is not *obliquely* irradiated onto a worktable, contrary to the claimed invention. Ambient light entering the casing 11 through the plate 20 partly *passes* through the mirror 40 to be led to the opening. (Col. 3, line 66 to Col. 4, line 10 and Figure 1.) Applicants find no disclosure in Seo of the plate 20/mirror 40 "obliquely" radiating ambient light passing through the plate to the barcode/opening 30. Therefore, Seo further does not teach or suggest the light guide directly accepting the external lights through the protrusion **to obliquely irradiate lights penetrating the light guide onto a surface of the worktable** through an opening formed in a lower panel of the case of Claim 18.

The sensor 81 of Seo may be considered as the "optical sensor" of the claimed invention. As disclosed by Seo, the sensor 81 is not disposed over the opening 30. Therefore, Seo also does not teach or suggest an optical sensor disposed in the case and **over the opening** to detect lights **reflecting from the surface of the worktable** of Claim 18.

Regarding Son, in the Office action at Page 6, prism 30 is considered as disclosing the "light guide" of the claimed invention. The prism 30 of Son does not have anything resembling a "protrusion" as claimed. Therefore, Son also does not teach or suggest the light guide directly accepting the external lights **through the protrusion** to obliquely irradiate lights penetrating the light guide onto a surface of the worktable through an opening formed in a lower panel of the case of Claim 18.

For purpose of this response, even if prism 30 is considered as being a protrusion and teaching the "light guide directly accepting the external lights through the protrusion" of the "light guide" of the claimed invention, light passing through the prism 30 is not "external light" and is not "irradiated onto a surface of the worktable" as claimed. To the contrary, the prism accepts light from an *internal* source (i.e., light source 24, Figure 7) and irradiated light to the lens 25, not the surface 28. Therefore, Son also does not teach or suggest the light guide directly accepting the external lights through the protrusion **to obliquely irradiate lights penetrating the light guide onto a surface of the worktable** through an opening formed in a lower panel of the case of Claim 18.

The sensor 27 of Son may be considered as the "optical sensor" of the claimed invention. As disclosed by Son, the sensor 27 is not disposed over the opening 30 to detect light reflecting *from the surface of the worktable* as claimed. To the contrary, the sensor 27 is disposed to detect light from the prism 30. Therefore, Son also does not teach or suggest an optical sensor disposed in the case and **over the opening** to detect lights **reflecting from the surface of the worktable** of Claim 18.

Additionally, Applicants respectfully submit that there exists no suggestion or motivation in the references nor in knowledge generally available in the art at the time of the invention, that would have motivated the skilled artisan to modify or combine Hunka, Atsumi, Seo and Son to teach the claimed invention.

Firstly, as discussed above, Hunka, Seo and Son do not teach or suggest anything of a "protrusion" directly accepting external light. Hunka and Son teach exactly to the contrary whereby the elements of Hunka and Son considered as teaching the "light guide" of the claimed invention are *completely internal* to their device. Even if Atsumi is considered as disclosing a "protrusion," the window 7 of Atsumi is blocked during use of the scanner, thereby not "directly accepting external light."

If the window 7/7a of Atsumi were disposed in place of the beam splitter 12/ lens system 14 of Hunka, the window 7/7a would be completely internal to the housing 110 of Hunka, contrary to the intended purpose of the window 7/7a as disclosed by Atsumi.

Therefore, there exists no suggestion or motivation in Hunka, Atsumi, Seo and Son, nor in knowledge generally available in the art that would have motivated the skilled artisan to modify or combine Hunka, Atsumi, Seo and Son to have a "light guide directly accepting the *external lights* through the *protrusion*" of the claimed invention.

Secondly, as discussed above, none of the elements of Hunka, Atsumi, Seo and Son considered as the "light guide" function to "*obliquely irradiate* external lights penetrating the light guide *onto a surface of the worktable* through an opening formed in a lower panel of the case" of the claimed invention. At best, light entering the "light guide" of Atsumi and Seo are irradiated "vertically," still contrary to the claimed invention. Therefore, there exists no suggestion or motivation in Hunka, Atsumi, Seo and Son, nor in knowledge generally available in the art that would have motivated the skilled artisan to modify or combine Hunka, Atsumi, Seo

and Son to have a "light guide irradiating *external lights* through the protrusion and *obliquely onto the surface of a worktable*" of the claimed invention.

Finally, as discussed above, none of the elements of Hunka, Atsumi, Seo and Son considered as the "sensor" are disposed so as to detect lights reflecting *from the surface of the worktable* of the claimed invention. To the contrary, Hunka, Atsumi, Seo and Son fail to teach obliquely irradiating light *onto* a worktable. Therefore, there would be no suggestion or motivation to place the "sensor" of Hunka, Atsumi, Seo and Son to detect light *from* the surface of the worktable since there is no light *onto* a worktable in the first place. Further to the contrary, the "sensors" of Hunka, Atsumi, Seo and Son are disposed positioned relative to prisms, lenses, mirrors, etc., without regard to an "opening" in the case nor to light from the surface of a worktable through that opening. Therefore, there exists no suggestion or motivation in Hunka, Atsumi, Seo and Son, nor in knowledge generally available in the art that would have motivated the skilled artisan to modify or combine Hunka, Atsumi, Seo and Son to have a "an optical sensor disposed in the case and over the opening *to detect lights reflecting from the surface of the worktable*" of the claimed invention.

Since Hunka, Atsumi, Seo and Son, alone or in combination, fail to teach or suggest all of the limitations of Claim 18 and that there lacks suggestion or incentive in the references or in knowledge generally available to one of ordinary skill in art that would lead that individual to combine the relevant teachings of the references to disclose the claimed invention, clearly, one of ordinary skill at the time of Applicant's invention would not have a *motivation to modify or combine the references, nor a reasonable likelihood of success* in forming the claimed invention by modifying or combining Hunka, Atsumi, Seo and Son.

Thus, for all the reasons discussed above, Applicants respectfully submit that Claim 18 is not anticipated, nor rendered obvious by Hunka, Atsumi, Seo and Son, and is therefore allowable to Applicants. Claims 19-22 variously depend from Claim 18 and are correspondingly allowable. Consideration and allowance of Claims 18-22 are respectfully requested.

Claims 23-28

Support for new Claims 23-28 is at least found in originally filed Claims 1-6, Figure 1 and in the specification at Page 6, line 14 to Page 7, line 5.

New independent Claim 18 recites, *inter alia*,

> "a light guide disposed at a sidewall of the case, introducing external lights into the case and including a protrusion outwardly protruded from the case, the light guide accepting lights reflecting from the worktable adjacent to the case through the protrusion to irradiate lights penetrating the light guide onto the optical sensor;."

For all the reasons discussed above, Hunka, Atsumi, Seo and Son do not teach or suggest a light guide including a protrusion of Claim 23.

For purpose of this response, even if window 7 of Atsumi is considered as being a "protrusion" and teaching the "light guide introducing the external lights through the protrusion" of the claimed invention, light passing through the window 7 and penetrating the window 7 is not reflected "from a surface the worktable adjacent to the case" of the claimed invention. Therefore, Atsumi further does not teach or suggest a light guide disposed at a sidewall of the case, introducing external lights into the case and including a protrusion outwardly protruded from the case, the light guide **accepting lights reflecting from the worktable adjacent to the case through the protrusion** of Claim 23.

Additionally, for all the reasons discussed above relative to Claim 18, Applicants respectfully submit that there exists no suggestion or motivation in the references nor in knowledge generally available in the art at the time of the invention, that would have motivated the skilled artisan to modify or combine Hunka, Atsumi, Seo and Son to teach the claimed invention.

Since Hunka, Atsumi, Seo and Son, alone or in combination, fail to teach or suggest all of the limitations of Claim 23 and that there lacks suggestion or incentive in the references or in knowledge generally available to one of ordinary skill in art that would lead that individual to combine the relevant teachings of the references to disclose the claimed invention, clearly, one of ordinary skill at the time of Applicant's invention would not have a *motivation to modify or combine the references*, nor a reasonable likelihood of success in forming the claimed invention by modifying or combining Hunka, Atsumi, Seo and Son.

Thus, for all the reasons discussed above, Applicants respectfully submit that Claim 23 is not anticipated, nor rendered obvious by Hunka, Atsumi, Seo and Son, and is therefore allowable to Applicants. Claims 24-28 variously depend from Claim 23 and are correspondingly allowable. Consideration and allowance of Claims 23-38 are respectfully requested.

Conclusion

All of the objections and rejections are herein overcome. In view of the foregoing, it is respectfully submitted that the instant application is in condition for allowance. No new matter is added by way of the present Amendments and Remarks, as support is found throughout the original filed specification, claims and drawings. Prompt issuance of Notice of Allowance is respectfully requested.

The Examiner is invited to contact Applicants' attorney at the below listed phone number regarding this response or otherwise concerning the present application.

Applicants hereby petition for any necessary extension of time required under 37 C.F.R. 1.136(a) or 1.136(b) which may be required for entry and consideration of the present Reply.

If there are any charges due with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130 maintained by Applicants' attorneys.

Respectfully submitted,

CANTOR COLBURN LLP

By: Amy Bizon-Copp

Amy Bizon-Copp
Reg. No. 53,993
CANTOR COLBURN LLP
Customer Number 23413
55 Griffin Road South
Bloomfield, CT 06002
Telephone (860) 286-2929
Facsimile (860) 286-0115

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